

**V(A). Planned Program (Summary)**

**Program # 3**

**1. Name of the Planned Program**

Food Safety (Safe and Secure Food Supply)

Reporting on this Program

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	13%	0%		
205	Plant Management Systems	20%	0%		
216	Integrated Pest Management Systems	12%	0%		
501	New and Improved Food Processing Technologies	5%	10%		
503	Quality Maintenance in Storing and Marketing Food Products	5%	10%		
504	Home and Commercial Food Service	20%	10%		
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%	35%		
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	15%	35%		
	<b>Total</b>	100%	100%		

**V(C). Planned Program (Inputs)**

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	12.8	1.3	0.0	0.0
Actual Paid Professional	17.0	0.9	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
611917	54727	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
295343	54727	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1705497	58333	0	0

## V(D). Planned Program (Activity)

### 1. Brief description of the Activity

**Food Safety Training for Food Service Workers:** Food Service Workers learned food safety principles for all aspects of the food service industry. Food Safety Classes were taught in 60 of the 67 counties throughout the state of Alabama.

**Home Grown:** Home Grown Projects highlighted water conservation, building raised garden beds, growing fruits and vegetables, using pesticides safely, composting, beneficial insects, and pruning fruit producing plants.

**Good Agriculture Practices:** Farmers learned how to write Standards of Operation (SOP's) for a Good Agriculture Practices (GAP) for Certification. Also GAP principles were taught to Farmers selling their produce at Farmers Markets. Programs for GAP were taught in 6 regionally located places with individual trained in writing their SOP's. There were 53 workshops taught for farmers selling their produce at Farmers Markets.

**Food Safety Training for Food Processors:** Processing safety standards were taught to 149 individuals for processing acidified food and seafood under Food and Drug Association (FDA) guidelines.

**Master Food Preserver:** Home food preservation principles were taught for water bath canning, pressure canning, freezing, drying and fermentation in 51 of the 67 counties throughout the state of Alabama. A team of Food Safety Regional Agents taught 120 classes in a one to four day sessions of classes.

### 2. Brief description of the target audience

The target audience was any consumer in the state of Alabama. No individual was excluded or singled out for this training.

**Food Safety Training for Food Service Workers:** The audience that attended the Food Service certification training course consisted of 1,323 individuals. Of the participants, 886 were (Caucasian) White, 344 were (African-American) Black, 40 were Asian, 26 were Hispanic, 26 were of other races and 1 did not report. Of the participants the majority were female (1084) with the remaining being 239

males. The majority of the individuals were 18 and older.

Home Grown: Residential gardeners growing for their families or as small producers at local farmers' markets.

Good Agriculture Practices: Training Farmers in Good Agricultural Practices: Fruit and Vegetable Producers learned food safety principles from the fields to the selling of their produce either at a Farmers Market or at a large retail outlet. The Farmers Market workshops were held in 44 of the 67 counties throughout the state of Alabama. Good Agricultural Practices Workshops were taught in 6 counties (Madison, Blount, Covington, Marengo, Chilton and Baldwin) throughout the state in each geographical location giving the farmers a meeting place that was within a reasonable driving distance. 1,245 individuals participated in training workshops related to Good Agricultural Practices and Food Safety for Farmers Markets. Of the total participants, 877 were (Caucasian) White, 348 were (African-American) Black, 13 were Asian, 2 Hispanic, 2 were more than one race and 3 were American Indian. Of the participants, 764 were male and 481 were females. The majority of the individuals were adults, with only 14 youth in attendance.

Food Safety Training for Food Processors: Two Better Process Control Schools were taught to a total of 14 individuals, with each passing a total of 7 exams covering all aspects of food processing. A seafood HACCP class was taught to 29 individuals, with each individual completing a HACCP plan for their facility. Food products were tested for 30 individuals to certify that the products were acidified food products. Nutrition Facts Labels were completed for 76 different food products.

Master Food Preserver: Home food preservation principles were taught for water bath canning, pressure canning, freezing, drying and fermentation in 51 of the 67 counties throughout the state of Alabama. 2,434 individuals participated in various food preservation classes. Of the participants, 1805 were (Caucasian) White, 525 were (African-American) Black, 6 were Asian, 79 were Hispanic, 3 were of other races and 10 were more than one race. Of the group, the majority were female (1611) with the remaining 781 being males. 1845 of the participants were adults and 589 were youth.

### 3. How was eXtension used?

The Alabama Cooperative Extension has been the lead state for the Food Safety Community of Practice (CoP). A core group from ACES started the Food Safety CoP program in 2009. Many publications and information has been posted to eXtension since the start of the CoP in Food Safety. Also, the ACES team has answered many question from "Ask the Expert" concerning all aspects of Food Safety but the majority of the questions answered were concerning Home Food Preservation.

#### V(E). Planned Program (Outputs)

##### 1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
<b>Actual</b>	18433	2323375	14872	0

##### 2. Number of Patent Applications Submitted (Standard Research Output) Patent Applications Submitted

Year: 2013  
 Actual: 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

2013	Extension	Research	Total
Actual	11	6	17

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- This program area will include numerous output activities and methods as part of the evaluation which are described/explained in the prior activities and methods sections. The success of many of these outcomes will be formally evaluated/measured by using individual activity evaluation forms designed specifically for each activity, the success of other activities and methods will be measured by the level of participation in the activity. In the target boxes below for each year, we are indicating the number of individual activities within this program area that will be formally evaluated using an evaluation instrument designed specifically for that activity.  
 Not reporting on this Output for this Annual Report

**Output #2**

**Output Measure**

- The number of individual activities within this program area that will be formally evaluated using an evaluation instrument designed specifically for that activity. (The number of Home Grown workshops/demonstrations offered)

Year	Actual
2013	88

**Output #3**

**Output Measure**

- Home Grown media stories: print, radio, Facebook, television

Year	Actual
2013	323

**Output #4**

**Output Measure**

- Cook4Safety Food Safety Curricula Developed

<b>Year</b>	<b>Actual</b>
2013	1

**Output #5**

**Output Measure**

- GAP Workshops Offered

<b>Year</b>	<b>Actual</b>
2013	6

**Output #6**

**Output Measure**

- Number of Participants in workshops

<b>Year</b>	<b>Actual</b>
2013	101

**Output #7**

**Output Measure**

- GAP Manual Developed

<b>Year</b>	<b>Actual</b>
2013	1

**Output #8**

**Output Measure**

- Enhancing the Safety of Locally Grown Foods Workshops Presented

<b>Year</b>	<b>Actual</b>
2013	53

**Output #9**

**Output Measure**

- Enhancing the safety of locally grown foods

<b>Year</b>	<b>Actual</b>
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2013 1212

**Output #10**

**Output Measure**

- ServSafe Classes Taught

<b>Year</b>	<b>Actual</b>
2013	129

**Output #11**

**Output Measure**

- ServSafe Classes

<b>Year</b>	<b>Actual</b>
2013	1323

**Output #12**

**Output Measure**

- Verify Acid in Foods to qualify then as Acidified Foods

<b>Year</b>	<b>Actual</b>
2013	30

**Output #13**

**Output Measure**

- Prepared Nutrition Facts Labels for Alabama Food Entrepreneurs

<b>Year</b>	<b>Actual</b>
2013	76

**Output #14**

**Output Measure**

- Food Safety Training for Food Processors: Better Process Control Schools

<b>Year</b>	<b>Actual</b>
2013	2

**Output #15**

**Output Measure**

- Food Safety Training for Food Processors: Better Process Control Schools Participants

<b>Year</b>	<b>Actual</b>
2013	14

**Output #16**

**Output Measure**

- Food Safety Training for Food Processors: Seafood HACP Workshop

<b>Year</b>	<b>Actual</b>
2013	1

**Output #17**

**Output Measure**

- Food Safety Training for Food Processors: Seafood HACCP Participants

<b>Year</b>	<b>Actual</b>
2013	29

**Output #18**

**Output Measure**

- Master Food Preserver Workshops

<b>Year</b>	<b>Actual</b>
2013	120

**Output #19**

**Output Measure**

- Master Food Preserver Workshop Participants

<b>Year</b>	<b>Actual</b>
2013	2434

**Output #20**

**Output Measure**

- Master Food Preserver Workshops: Publications Prepared

<b>Year</b>	<b>Actual</b>
2013	2

**V(G). State Defined Outcomes**

**V. State Defined Outcomes Table of Content**

O. No.	OUTCOME NAME
1	A major outcome will be the number of food service workers who participate in Extension sponsored Food Safety Training.
2	Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The "who" includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to "success". The basic question to be answered in this part is "what difference did this program make". The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program. Since this program area is very broad in scope and contains multiple Extension Team Projects which have different outcome measures, the impacts for this program area are best measured in the number and quality of the success stories generated by the individuals who work on these projects. Therefore, one very significant outcome measure is the number of success stories generated.
3	Increase knowledge of alternate pest management strategies in home food gardens
4	Increase adoption of principles taught: IPM in home vegetable and fruit crops, #people who start/enhance their own food garden at home
5	# vol's who assist teaching workshops and demonstrations
6	Increase knowledge and adoption of Good Agricultural Practices (GAP)and Good Handling Practices (GHP) for commercial food producers.
7	Increase knowledge and adoption of Better Processing of acidified foods by completing the Better Process Control School.
8	Home Grown for the % of participants who gained knowledge of pollinating insects and their importance in food gardens.
9	Increase the knowledge and practice of safe home food processing

## **Outcome #1**

### **1. Outcome Measures**

A major outcome will be the number of food service workers who participate in Extension sponsored Food Safety Training.

### **2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	1323

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

In the State of Alabama the certified food safety training course is required for one individual employed in every food service establishment. Therefore, this course is necessary to keep the establishment open to the public. This means revenue for the individual as well as the state. Also, by teaching the food safety principles in this course the individuals leave with a gain in knowledge of safe food preparation.

#### **What has been done**

1,323 individuals completed the certification course. Only 206 individuals did not successfully pass the certification exam.

#### **Results**

Food Service establishments remain open generating revenue and safer food is sold to consumers. The cost of foodborne illness in the US as estimated by Scharff was \$152 billion dollars in 2010 but in 2012 the estimate was reduced to \$77.7 billion. By following even one newly learned food safety practice from the ServSafe program a food borne illness could be prevented therefore reducing the cost of this illness on society.

### **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
501	New and Improved Food Processing Technologies
503	Quality Maintenance in Storing and Marketing Food Products
504	Home and Commercial Food Service

- 711      Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712      Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**Outcome #2**

**1. Outcome Measures**

Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The "who" includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to "success". The basic question to be answered in this part is "what difference did this program make". The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program. Since this program area is very broad in scope and contains multiple Extension Team Projects which have different outcome measures, the impacts for this program area are best measured in the number and quality of the success stories generated by the individuals who work on these projects. Therefore, one very significant outcome measure is the number of success stories generated.

Not Reporting on this Outcome Measure

**Outcome #3**

**1. Outcome Measures**

Increase knowledge of alternate pest management strategies in home food gardens

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Actual
2013	91

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

The Garden Writers Association Foundation 2013 Winter Gardening Trends Research report indicated: 81.5% (~55.5 million households) have grown edible plants (fruits/vegetables/herbs) since 2009 and 91.4% of those grew edibles in 2012. If planning to grown edible plants in 2013, their top 5 challenges were: Time (35.7%); Insect & Disease control (30.8%); Wildlife Control (20.6%); Irrigation (23.6%) and Cost (13.0%). Family well-being (National Gardening Assoc., 2009, Impact of Home & Community Gardening in America). Respondents have a food garden for: Better tasting food, perception of saving money on food bills, better quality of food, and to grow food they know is safe. Average yields in these gardens =1/2 lb/ft2 and the majority of gardens were sized 100ft2 or less.

**What has been done**

78 Workshops and demonstrations hosted (23 groups were surveyed)

**Results**

91% of participants gained knowledge about installing drip irrigation; 86% gained knowledge in choosing resistant varieties for better pest management; 77% gained knowledge about soil amendments to grow healthier plants; 67% gained knowledge in alternative pest management tactics; 69% said they would use the pruning techniques we demonstrated to them on fruit-crop plants. (N=580)

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
216	Integrated Pest Management Systems

**Outcome #4**

**1. Outcome Measures**

Increase adoption of principles taught: IPM in home vegetable and fruit crops, #people who start/enhance their own food garden at home

Not Reporting on this Outcome Measure

**Outcome #5**

**1. Outcome Measures**

# vol's who assist teaching workshops and demonstrations

Not Reporting on this Outcome Measure

## **Outcome #6**

### **1. Outcome Measures**

Increase knowledge and adoption of Good Agricultural Practices (GAP) and Good Handling Practices (GHP) for commercial food producers.

### **2. Associated Institution Types**

- 1862 Extension

### **3a. Outcome Type:**

Change in Action Outcome Measure

### **3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	6

### **3c. Qualitative Outcome or Impact Statement**

#### **Issue (Who cares and Why)**

In order for farmers to sell their produce to large retail establishments their farms must be certified in Good Agricultural Practices. The buyer of the produce from the retailers to the consumer, all are looking for safer food. Safer produce sold at Farmers Markets is required for the discerning consumer. These trainings help the farmers sell more produce as well as safer produce.

#### **What has been done**

A total of 6 workshops were taught to over 100 participants in the GAP/GHP training workshops. Each participant received a notebook with all the forms needed to complete the Standards of Operation to meet the requirements in the GAP program. Some one-on-one trainings were done with many farmers. A team of Food Safety Regional Agents taught 53 workshops titled "Enhancing the Safety of Locally Grown Produce." A total of 1,212 individuals attended these workshops.

#### **Results**

For the "Enhancing the Safety of Locally Grown Produce" an evaluation instrument was used and of the 1,212 participants of this program, 342 completed the form. The participants intended to: Conduct a self-inspection of your produce farm and facilities (n=236); Make changes with the land they use for growing produce (n=141); Would make changes in the timing of irrigation (n=100); Make changes in the water they use to wash their produce (n=140); Make improvements in their hand washing facilities (181); Make improvements in their toilet facilities for their workers (116); Switch to containers that can be cleaned and sanitized for use with produce (n=184); Provide more training for their workers (n=151); Make improvements in the way they clean their facilities and equipment (218); Make improvements in the way they sanitize their facilities and equipment (228); Monitor storage temperatures of their produce (186); Make improvements in the cleanliness of the vehicles they use to transport their produce to market (202); Make a plan to better trace their produce once it leaves the farm (184); Keep better records (n=222).

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
503	Quality Maintenance in Storing and Marketing Food Products
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

#### Outcome #7

##### 1. Outcome Measures

Increase knowledge and adoption of Better Processing of acidified foods by completing the Better Process Control School.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Action Outcome Measure

##### 3b. Quantitative Outcome

Year	Actual
2013	149

##### 3c. Qualitative Outcome or Impact Statement

###### **Issue (Who cares and Why)**

The Better Process Control is a Nationally recognized training workshop that is required by the Food and Drug Association (FDA) for a food processor that wishes to start selling products commercially. Also, the Seafood HACCP certification and a HACCP plan must be in place to sell seafood commercially. Therefore, these courses not only teach safe food processing principles but also keep the food companies in business and increase their revenues by the selling food products that have been produced in a certified facility by a certified food processor. Nutrition Facts Labels that are prepared for the Food Entrepreneur assists that food processor to move to the larger retail food establishments that require this labeling on the food products.

###### **What has been done**

Two BPCS were taught last year, one in the spring and one in the fall, with a total of 14 attendees. Each participant must complete 7 exams to become a Food and Drug Administration

(FDA) certified acidified food processor. One Seafood HACCP class was taught to 29 individuals in Mobile, AL where the majority of the seafood processors are found. Some participants to the BPCS and the Seafood HACCP classes were from other states. As a part of the class each participant must complete a HACCP plan. Then a certificate is issued to them from the Association of Food and Drug Officials. Also, the ACES food testing lab tested 30 products to certify that they were acidified foods to allow for the correct processing procedures for the various products. Also, 76 individuals obtained a Nutrition Facts Label for their food products.

### Results

A total of 149 individuals and companies were assisted in getting their foods businesses up and running or assisted them in keeping them in business with the proper food safety training courses.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
503	Quality Maintenance in Storing and Marketing Food Products
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

### Outcome #8

#### 1. Outcome Measures

Home Grown for the % of participants who gained knowledge of pollinating insects and their importance in food gardens.

#### 2. Associated Institution Types

- 1862 Extension

#### 3a. Outcome Type:

Change in Action Outcome Measure

#### 3b. Quantitative Outcome

Year	Actual
2013	88

#### 3c. Qualitative Outcome or Impact Statement

##### Issue (Who cares and Why)

Many food crops depend on pollinators (insects primarily) for production. Cucurbits, blueberries, and others produce lower quality and/or quantity when beneficial insects activities decrease. Misuse of pesticides can affect the presence of beneficial insects (James, Tew, Protecting Honey Bees From Pesticides. ANR-1088). And while "What do I spray on it?" is a common question

presented to Extension Agents, pesticides aren't always necessary to address the perceived problem. We teach our clients how to identify the problem, determine the severity of the problem, and then multiple options to address the problem. When suggesting pesticides, we teach them to "READ the label," proper use, and to notice and protect pollinators.

**What has been done**

18 Workshops and demonstrations hosted and surveyed

**Results**

88% of participants gained knowledge of the environmental risks to pollinators; 69% gained knowledge of ID characteristics of pollinator insects; 71% agreed to educate others about the importance of pollinators; 75% agreed to protect pollinators by limiting pesticide use to later afternoon (N=196)

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
205	Plant Management Systems
216	Integrated Pest Management Systems

**Outcome #9**

**1. Outcome Measures**

Increase the knowledge and practice of safe home food processing

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Actual</b>
2013	2434

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Home food processing is on the increase with the new generation of looking to eat less processed foods and to grow their own foods. This generation has never done this type of food processing. Therefore, the Alabama Cooperative Extension System has taught for generations safe food processing guidelines for home canning. As a result of the Home Food Preservation classes the deaths from botulism has decreased to almost nonexistent. However, with this new generation of home food processors we need to continue this program to keep our citizens safe.

### **What has been done**

A team of 9 Regional Extension agents taught 120, one to four day classes on the various food preservation topics. Classes on Pressure Canning, Water Bath Canning, Freezing and Drying were taught in these classes. These programs reached a total of 2,434 individuals. These classes were taught in 51 of the 67 counties in the state of Alabama.

### **Results**

Of the 2,434 individuals taught, 446 completed a pre & post-test survey. The individual demographics for the survey was: 354 White, 57 Black, 3 Hispanic, 7 Asian; 20 other races and 7 not answering. 370 females; 72 males; 4 not answering. The ages attending: 23 individuals were 10 to 19, 75 were 20 to 45, 144 were 46 to 59, and 184 were 60 to 75, with 16 reporting over 76 years of age. Four individuals gave no answer. Prior to the program 141 of the participants had never canned and 123 of the participants canned only 10 to 20 jars of food last year. 1: ?How much water do you use in a water bath canner,? 241 participants answered correctly on the pre-test; 397 answering correctly on the post test. 2: ?Is it ok to water bath can Green Beans?, 167 said yes on the pre-test, post-test 364 gave the correct answer of it is not safe. 3: ?If they use USDA approved recipes for water bath canning prior to the program in the pre-test, 113 of the participants said, No. Many reported using non-research based recipes from the internet. Botulism is one of the most deadly toxins known to man. Therefore, if foods are not processed to the proper time and temperature deaths from botulism could result.

## **4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
504	Home and Commercial Food Service

## **V(H). Planned Program (External Factors)**

### **External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Competing Public priorities
- Competing Programmatic Challenges

### **Brief Explanation**

N/A

## **V(I). Planned Program (Evaluation Studies)**

### **Evaluation Results**

In the Home Grounds programs, Home Grown workshops/demos', significant learning occurred for the survey respondents. Participants improved their knowledge from 67% to 91% (n=580). Many also responded they intend to apply the principles taught or shown to them during the programs (change their plant management tactics to those recommended, ID insects before using pesticides, protect pollinators by changing their pesticide usage).

## Key Items of Evaluation

Prior to attending classes on various food preservation topics 141 of the participants had never canned and 123 of the participants canned only 10 to 20 jars of food last year. When asked 1: "When you make Jams or Jelly do you," only 167 participants out of 446 answered the question correct in the pre-test; post-test 363 answered the question correctly. 2: "How much water do you use in a water bath canner," 241 participants answered correctly on the pre-test; 397 answering correctly on the post test. 3: "Is it ok to water bath can Green Beans", 167 said yes on the pre-test, post-test 364 gave the correct answer of it is not safe. 4: "If they use USDA approved recipes for water bath canning prior to the program in the pre-test, 113 of the participants said, No. Many reported using non-research based recipes from the internet. The practice of not processing the food to the proper time and temperature could also be deadly to the consumer.

Participants in the Home Grown project will have successful gardens by implementing the recommended techniques. Following these recommendations can also reduce unnecessary or wasteful pesticide usage and exposure; increased soil organic matter can increase soil water-holding capacity and soil structure, enhance fertility management, and enhance irrigation efficiency. Presuming an average garden size of 100ft<sup>2</sup>, a single season garden can minimally add \$75 to a family's resources (Gail Langelotto, How Much Does a Vegetable Garden Cost/Save, 4/14/12). This value increases with garden size and additional crop seasons.

Add to this a national need to increase consumption of fruits/vegetables, the home garden is a prime opportunity for improving a family's diet. People who grow/tend a garden are more likely to eat greater quantities of fruits/vegetables.